ABSTRACT OF THE DISCLOSURE

A communications device with the capability of accurately estimating Doppler frequency for improved

5 wireless communication. At radio frame intervals, a complex time-domain response measurement unit obtains complex time-domain response signals representing the characteristics of propagation paths. A phase difference calculator then calculates absolute phase differences

10 between a selected set of complex time-domain response signals, such as those having the largest magnitude in respective frames. In the case where such maximum signals change their time positions frequently, the time position of the maximum signal in a particular frame is selected,

15 and the complex time-domain response signals extracted from that fixed position in consecutive frames are subjected to the phase difference calculation. The mean value of those absolute phase differences are calculated over a plurality of radio frames by an average operator.

20 Finally, a Doppler frequency estimator estimates Doppler frequency by dividing the mean value by the time length of the radio frame.

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